



# RAILROAD COMMISSION OF TEXAS

## HEARINGS DIVISION

### PROPOSAL FOR DECISION

**Rule 37 Case No. 0284486**  
**Status No. 768743**  
**District 03**

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**APPLICATION OF SABCO OPERATING COMPANY, LLC FOR A RULE 37  
LEASE-LINE SPACING EXCEPTION FOR THE RECOMPLETION  
(DIRECTIONAL) OF WELL NO. 4, SABCO FOLTS LEASE IN THE LA BELLE,  
SW (6500)FIELD, JEFFERSON COUNTY, TEXAS**

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### APPEARANCES

**FOR APPLICANT SABCO OPERATING COMPANY, LLC**

Doug Dashiell, Attorney at Law  
Behrooz Ramesh, Vice President of Engineering  
Edward C. McClintock, Geophysical Manager  
Lisa D. Warren, Landman  
Barry J. Rava, Geological Consultant  
Noonan A. Prince, Petroleum Engineer

**FOR PROTESTANT SQUARE MILE ENERGY, LLC**

James N. Bostic, Attorney at Law  
Kerry Bonner, President and Chief Operating Officer

### PROCEDURAL HISTORY

DATE OF NOTICE OF HEARING	October 28, 2013
DATE OF AMENDED NOTICE OF HEARING	November 13, 2013
DATE OF HEARING	November 22, 2013
TRANSCRIPT RECEIVED	December 6, 2013
HEARD BY	Terry J. Johnson, Legal Examiner Paul Dubois, Technical Examiner

STATEMENT OF THE CASE

Sabco Operating Company, LLC (Sabco) seeks a Rule 37 lease-line spacing exception to authorize an additional completion in the LaBelle, SW (6500) field for its Sabco Folts Well No. 4. The well currently produces solely from the LaBelle (8600 Sand) field. The recompletion requires a Rule 37 exception because the existing well is located 36 feet from the lease line of protestant Square Mile Energy, LLC (Square Mile). The target field requires minimum lease-line spacing of 467 feet.

APPLICANT'S CASE

Sabco's first witness was Edward C. McClintock, Sabco's managing geophysicist. Mr. McClintock testified that Sabco drilled Well No. 5 on the Sabco Folts 116-acre lease, targeted for the LaBelle, SW (6500) field. Well No. 5 came in approximately 10 feet lower in the structure than had been anticipated and was completed in what turned out to be a small stray sand located above the target LaBelle. The well watered out after producing 1,200 barrels of oil and was plugged.

Mr. McClintock testified that Well No. 4 is completed in the LaBelle (8600 Sand) but its wellbore transits the LaBelle (6500) pay sand. Well No. 4 only is 202 feet from Well No. 5, but the LaBelle (6500) sand is shaled out at the subsurface location of No. 5<sup>1</sup>.

Square Mile's brief cross-examination left this testimony undisturbed.

Lisa Warren, Sabco's landman testified that Square Mile operates the only well in the LaBelle (6500) field—the Catfish No. 1—under a farm-out agreement with Sabco. Ms. Warren was not cross-examined.

Sabco's third witness was Barry Rava, consulting geologist and geophysicist. Mr. Rava testified that he examined the stratigraphy of 20 wells in the vicinity of the Folts No. 4, including the Catfish No. 1 and the Folts No. 5, which are the two wells closest to the No. 4. Mr. Rava stated that he found a shale-filled erosional channel which cut through the 6500-foot sand in several of the study wells, including the Folts 5 and Catfish 1.

Mr. Rava testified that he had reviewed the seismic line down the well path of the Catfish 1 and had evaluated other seismic data.

"I've looked at a series of north-south lines that basically intersect the

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<sup>1</sup>Sabco's Exhibit 1, a well location plat, is attached as Appendix 1.

faults in a dip position that would image [sic] a well as we move to the east across through the intended end of the fault.”

Among the exhibits Mr. Rava introduced was a west-to-east stratigraphic cross-section through the area. Referring to the target 6500 foot sand, he testified that the exhibit revealed in a broad regional sense “what this particular sand package was doing from one part of the area to the next.” Oriented by a common depositional point rather than a common depth, the cross-section showed that shale deposits varied in thickness from two feet to eight feet, separating an upstructure rider sand from the deeper and more massive main body of the 6500 foot sand.

Mr. Rava testified that 12 vertical feet of this upper sand lobe is present in the Folts No. 4 but is shaled out in both the Folts 5 and the Catfish 1. He stated that the Catfish 1 is the highest well on the structure in its part of the field. The Folts 4, he said, is the highest well on the structure in its part of the field and somewhat downdip of the Catfish 1. Finally, Mr. Rava testified that the proposed location is necessary because moving to the east away from Square Mile’s tract would access only a structurally lower, watered-out portion of the field.

Square Mile’s brief cross-examination left Mr. Rava’s testimony undisturbed.

Sabco’s final witness was reservoir engineer and Sabco vice president of engineering Behrooz Ramesh. Mr. Ramesh testified that Sabco’s lease has 3.327 surface acres over the target sand containing approximately 24 acre-feet of pay. He said that the reserves in place beneath Sabco’s lease amounted to approximately 37,800 barrels of oil. Based on his evaluation of resistivity, porosity and water saturation of the target interval, Mr. Ramesh estimated that Well No. 4 would produce between 15,200 and 24,500 barrels of oil over its economic life, a recovery factor of 40- to 60 percent.

Mr. Ramesh also testified that pressure testing data show that the Folts No. 4, with 2982 psia at a depth of 6534 feet, and the Catfish No. 1, with 2953 psig at 6757 feet, are in pressure communication through a common reservoir.<sup>2</sup> He stated that Square Mile has reported production of some 180,000 barrels of oil from the LaBelle, SW (6500) field.

Mr. Ramesh testified that the Folts 4 currently produces 50 barrels of oil per day from the LaBelle (8600 Sand). If the permit is granted, he said that Sabco will convert the well to a dual completion. Mr. Ramesh testified that a stand-alone location to the east would lack the necessary structural position to access the identified reserves.

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<sup>2</sup>There is a 14.6959 psi difference between psig (gauge) and psia (absolute). The distinction is immaterial to the case at hand.

Square Mile's brief cross-examination left Mr. Ramesh's testimony undisturbed.

PROTESTANT'S CASE

Petroleum engineer Kerry Bonner, Square Mile's president and chief operating officer, testified on direct examination that, in his opinion, Sabco should be seeking a new field designation instead of a spacing exception for the LaBelle SW (6500).

"[. . .] Sabco is seeking to produce from a hydrocarbon accumulation that is separated from the LaBelle, SW (6500) Field by a shale-out. The shale-out is the boundary and appears that that [sic] is the primary trapping mechanism based on the maps that I saw that they presented into evidence, not the fault. *Thereby that would require that Sabco obtain a new field designation for this isolated reservoir and a Rule 37 exception for such new field*, which is not the subject of today's hearing. (Emphasis supplied)

This testimony, however, was contradicted by Mr. Bonner's testimony on cross-examination.

Q (by Mr. Dashiell):       [. . .] Is it your position . . . that the 6500 foot sand in the Folts No. 4 is the same common reservoir that is being produced in the Catfish No. 1 well?

A:     Yes.

[. . .]

Q:     Is it your position as you sit here today that our well is in a common reservoir with your well?

A:     That is our position, yes.

[. . .]

Q:     And it's in the same field as your well, correct?

A:     Well if the permit is granted and you recomplete it, yes because it is not currently completed in the same field. It is drilled through the same field.

Square Mile presented no other witnesses and made no attempt to either explain or reconcile the conflicting testimony.

### DISCUSSION AND RECOMMENDATION

The matter at hand is not the parties' first fight over a Rule 37 exception in this field. In a previous contested case, now two years old, Square Mile had protested Sabco's application to drill the Sabco Folts Well No. 5 into the LaBelle, SW (6500) at a location 33 feet from Square Mile's lease.<sup>3</sup> Sabco, however, was granted the exception and drilled a new vertical well that came in too low in the structure, producing only 1,200 barrels from an outlying rider sand before watering out. The well has since been plugged and abandoned.

The evidence of record in the current dispute supports the conclusion that Sabco's lease sits atop a 12-foot pay sand holding approximately 37,800 barrels of oil. Sabco plans to access these reserves through the wellbore of its existing Sabco Folts Well No. 4. Well No. 4 is a directional well that drifted briefly to the southwest, where it drilled through the LaBelle, SW (6500) sand before being steered northeast for completion in the deeper LaBelle (8600 Sand) field.

Sabco proposes an uphole recompletion that would allow Well No. 4 to produce from both the LaBelle, SW (6500) and the LaBelle (8600 Sand) fields. This recompletion in the 6500-foot sand would come in structurally higher than the ill-starred No 5. The No. 4 is 36 feet from Sabco's lease line. Field rules call for 467-foot spacing. It is undisputed that the target reserves cannot be accessed from a regular location on the Sabco Folts lease.

Square Mile's offset, the Catfish 1, lies approximately 800 feet west of Well No. 4 and is currently the only well in the LaBelle, SW (6500) field. It is undisputed that this well, which has already produced 180,000 barrels of oil, is draining hydrocarbons from beneath the Sabco Folts lease.

Square Mile argues that its seismic data support a secondary structural high some 467 feet east of the proposed location. In the alternative, Square Mile asserts that the target interval is in fact a new field that is separate from the LaBelle, SW (6500). Square Mile argues that Sabco must obtain both a new field designation and a Rule 37 exception for that field. The credible evidence of record justifies neither view.

First, Square Mile's new-field argument does not survive the testimony of its own witness. Mr. Bonner testified on direct examination that the target reserves are held in a different field than the LaBelle, SW (6500), a view promptly unhorsed by his cross-examination testimony that the proposed recompletion of the Sabco Folts No. 4 would be in the same field as the Catfish 1. Such testimony has the net effect of neutralizing credibility.

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<sup>3</sup> Rule 37 Case No. 0271408 (Commission Final Order Granting, June 13, 2012; Motion for Rehearing Denied, September 11, 2012)

Next, Square Mile's claim of an alternate structural high rests on a geologic interpretation that is unchanged from the previous case. Specifically, Square Mile posits a trapping fault that extends to the east, an interpretation that was considered and expressly rejected in the prior dispute. Although the previous treatment of this view is not controlling here, after considering the record as a whole, the examiners hold that Sabco's interpretation is entitled to greater persuasive weight and credibility.

The evidence of record supports the conclusion that a shale barrier isolates the top lobe of the LaBelle, SW (6500) from both the Catfish 1 and the abandoned Sabco No. 5. The Catfish 1 has production from the main body of the reservoir because its upstructure position lies beneath this shale-out. Approval of the pending application will allow Sabco to access 37,800 barrels of oil that are sequestered within a structural high which is separated from the Catfish 1 by a layer of impermeable shale. Although the Square Mile and Sabco wells do share a common reservoir, the target reserves are in fact segregated from the main body of the reservoir by an oil-water contact horizon that bars their migration.

It is recommended that the Commission adopt the following Findings of Fact and Conclusions of Law and enter an order granting the pending application.

#### **FINDINGS OF FACT**

1. At least ten (10) days notice of hearing was provided to all affected persons.
2. Sabco Operating Company, LLC (Sabco) seeks a drilling permit authorizing an exception to the minimum lease-line spacing requirements for the recompletion (Directional) of Well No. 4, Sabco Folts lease in the LaBelle, SW (6500) field, Jefferson County, Texas.
3. Square Mile Energy, LLC (Square Mile) is the record operator of the Catfish No. 1, which is located on a lease that adjoins the western boundary of the 116-acre Sabco tract.
4. The Sabco Folts No. 4 is currently completed in the LaBelle (8600 Sand) field.
5. Sabco proposes to dually complete Well No. 4 by adding a completion in the LaBelle, SW (6500).
6. Well No. 4 is located 36 feet from the Sabco-Square Mile lease line.
7. Field rules for the LaBelle, SW (6500) require minimum lease-line spacing of 467 feet.
8. The LaBelle, SW (6500) is a strong water-drive reservoir, with hydrocarbons in economic quantities trapped only at elevated structural positions in the formation.

9. Square Mile's Catfish No. 1 is currently the only well draining the LaBelle, SW (6500) field.
10. The Catfish 1 is approximately 800 feet west of the Sabco No. 4.
11. A shale barrier separates the upper lobe of the LaBelle, SW (6500) from the Catfish No. 1.
12. In October 2012, Sabco drilled the Sabco Folts No. 5, targeting the LaBelle, SW (6500).
13. Well No. 5 came in structurally low, watered out after producing only 1,200 barrels of oil and has been plugged and abandoned.
14. Well No. 5 is located approximately 200 feet south of Well No. 4.
15. A shale barrier separates the upper lobe of the LaBelle, SW (6500) from Well No. 5.
16. Sabco's proposed recompletion of Well No. 4 will share a common reservoir with the Catfish 1.
17. Sabco's lease sits atop a 12-foot pay sand in the upper lobe of the LaBelle, SW (6500) containing reserves of approximately 37,800 barrels of oil.
18. Because each well is shaled-out from the top of the formation, neither the Catfish 1 or the Sabco No. 5 has access to these reserves.
19. There is no regular location on Sabco's lease that will allow production of these reserves.
20. The proposed location will come in higher than the Sabco No. 5 but somewhat downdip from the Catfish 1.
21. The proposed location is the structurally highest placement in Sabco's part of the LaBelle, SW (6500) field.
22. The proposed location is reasonable and is situated to prevent waste and protect the correlative rights of mineral owners.

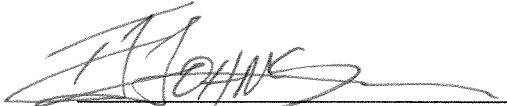
### CONCLUSIONS OF LAW

1. Proper notice of hearing was timely issued by the Railroad Commission to

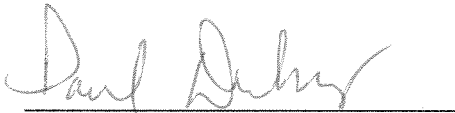
affected persons legally entitled to notice.

2. All things necessary to the Commission attaining jurisdiction over the subject matter and the parties in this hearing have been performed.
3. Approval of a Rule 37 exception to the minimum lease-line spacing requirements for the recompletion (Directional) of Well No. 4, Sabco Folts lease in the LaBelle, SW (6500) field, Jefferson County, Texas is necessary to prevent waste and protect correlative rights.

Respectfully submitted on this the 10<sup>th</sup> day of June,  
2014.



Terry J. Johnson  
Hearings Examiner

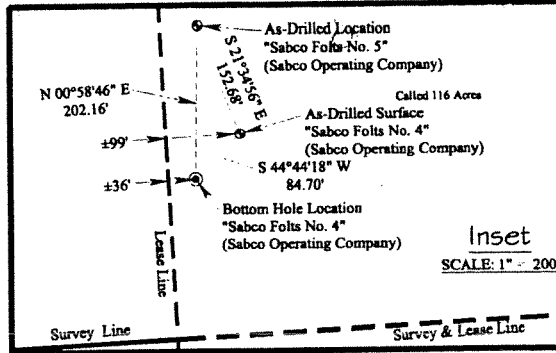


Paul Dubois  
Technical Examiner



File name: 130309-2 FOLTS 5.dwg RBJJ/JEC  
 Plot date: 08/07/13 at 12:32  
 Revised date: 08/16/13 at 4:24  
 Revised date: 08/20/13 at 4:24  
 Signed date: 08/21/13 at 5:22  
 Jefferson County, Texas

# Appendix 1



NOTE:  
 ALL THE HORIZONTAL CONTROL IS REFERRED TO THE TEXAS STATE PLANE COORDINATE SYSTEM, LAMBERT PROJECTION, SOUTH CENTRAL ZONE, NAD 27 DATUM. ALL BEARINGS, DISTANCES AND ACREAGES ARE GRID. THE THETA CORRECTION AT THE PROPOSED WELL SURFACE LOCATION "SABCO FOLTS No. 5" IS  $+02^{\circ}22'14''$  AND THE SCALE FACTOR IS 0.999895851.

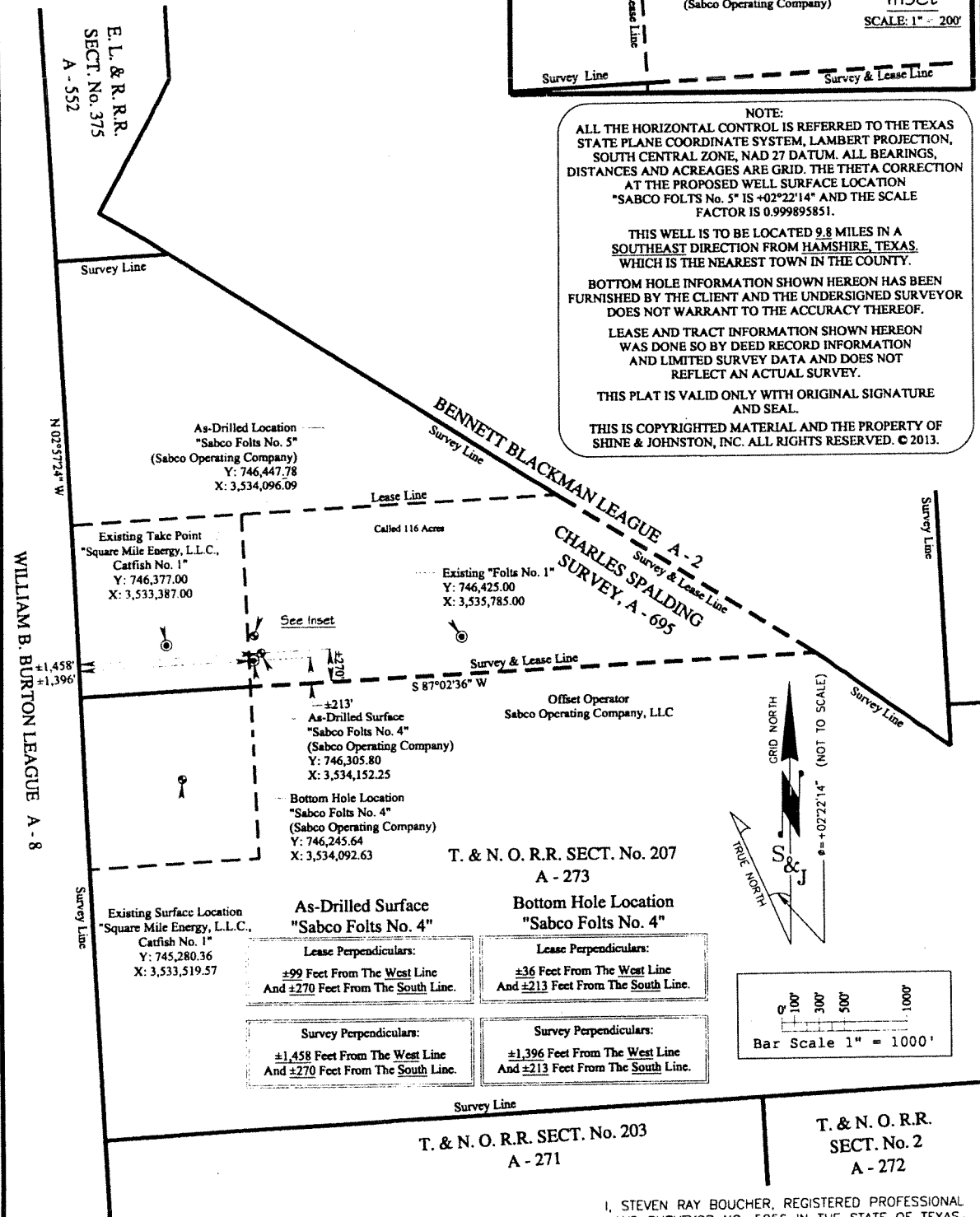
THIS WELL IS TO BE LOCATED 9.8 MILES IN A SOUTHEAST DIRECTION FROM HAMSHIRE, TEXAS, WHICH IS THE NEAREST TOWN IN THE COUNTY.

BOTTOM HOLE INFORMATION SHOWN HEREON HAS BEEN FURNISHED BY THE CLIENT AND THE UNDERSIGNED SURVEYOR DOES NOT WARRANT TO THE ACCURACY THEREOF.

LEASE AND TRACT INFORMATION SHOWN HEREON WAS DONE SO BY DEED RECORD INFORMATION AND LIMITED SURVEY DATA AND DOES NOT REFLECT AN ACTUAL SURVEY.

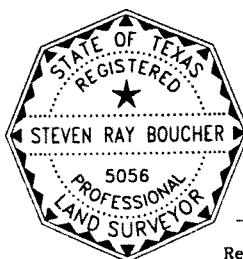
THIS PLAT IS VALID ONLY WITH ORIGINAL SIGNATURE AND SEAL.

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Sabco Operating Company, LLC  
 Sabco Folts  
 Jefferson County, Texas

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 Silsbee, Texas 77656  
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 Fax# (409) 385 - 0936



I, STEVEN RAY BOUCHER, REGISTERED PROFESSIONAL LAND SURVEYOR NO. 5056 IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT THIS PLAT CORRECTLY SHOWS THE EXISTING WELL LOCATION OF "SABCO FOLTS No. 4"

IN THE CHARLES SPALDING SURVEY, ABSTRACT 695, JEFFERSON COUNTY, TEXAS AS PREPARED IN THIS OFFICE.

Steven Ray Boucher  
 Registered Professional Land Surveyor No. 5056